**Math 1050 Exam 5 Review**

1. Know the definition of a sequence.
2. Simplify: 
3. Write out the first six terms of the sequence.

 

1. Understand recursively defined sequences. Write out the first five terms.



1. Understand and use summation notation. Write out the sum.



1. Express the sum using summation notation.

2 + 4 + 6 + . . . + 16

1. Find the sum of the sequence.



1. For arithmetic sequences, find the nth term and the sum of the first n terms, given the initial term and the common difference.



1. Given two terms of an arithmetic sequence, find the first term and common difference.

7th term is - 47; and the 13th term is -101

1. Find the sum.

2 + 5 + 8 + . . . + 41

1. For geometric sequences, find the nth term and the sum of the first n terms.



1. Find the fifth term and the nth term given a = 4 and r = ½.
2. Find the infinite sum of a geometric sequence.

a)  b) 4 + 1 + 1/4 +…..

1. Solve applications problems using sums of sequences.

A theater has 22 rows with 15 seats in the first row, 20 in the second row, 25 in the third row and so forth. How many seats are in the theater?

1. Find the 80th term of -1, 1, 3, . . .
2. Find the sum. 
3. Determine whether the geometric series converges or diverges. If it converges, find its sum.
4. 

b) 15 + 5 + 5/3 + . . .

1. Determine whether the given sequence is arithmetic, geometric or neither. It the sequence is arithmetic, find the common difference; if it is geometric , find the common ratio.
2.  b) 
3. Evaluate  .



1. Expand an expression using the Binomial Theorem

a) (x -1)5

b) (2x + 3)5

1. Use the Binomial theorem to find the indicated coefficient or term.
2. Find the coefficient of x in the expansion of (2x -1)3.
3. Find the third term in the expansion of (x - 3)7.